National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation

Revised 10/5/2004

CALIBRATION LABORATORIES **NVLAP LAB CODE 200679-0**

IPS CORPORATION TOKYO CALIBRATION CENTER
935, Fusa
Abiko-City, Chiba Prefecture 270-1101
JAPAN
Mr. Osamu Kubota
Phone: +81-266-44-5200 Fax: +81-266-44-5300
E-Mail: kubota@ips-emc.co.jp
URL: http://www.ips-emc.co.jp

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E13
Magnetics

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
1.26 μT to 62.8 μT @ 50 Hz	2.11 %	Magnetic Field Meter (IEC 61786) Response to H-field

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TIME AND FREQUENCY

NVLAP Code: 20/F01
Frequency Dissemination
CISPR Receiver (CISPR 16-1-1)

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
CISPR Band A, B, and C/D 9 kHz to 3.3 GHz	1.35 %	Input Impedance
	0.32 dB	Sine wave Voltage Accuracy - linearity
	0.28 dB	Sine wave Voltage Accuracy - flatness (freq. response)
	0.83 dB	Response to Pulse Amplitude Relationship Band A & B
	0.94 dB	Response to Pulse Amplitude Relationship Band C & D
	0.31 dB	Response to Pulse (variation with repetition frequency)
	0.85 %	Overall Selectivity (Band A)
	1.75 %	Overall Selectivity (Band B)
	3.47 %	Overall Selectivity (Band C & D)

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	9.345×10^{-6}	Frequency Measure (Intermediate Frequency)
	0.19 dB	Random Noise

NVLAP Code: 20/F01
Frequency Dissemination

CISPR Pulse Generator (CISPR 16-1-1)

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
CISPR Band A, B, and C/D 9 kHz to 3.3 GHz	5.98 %	Pulse area and pulse Width
	2.55 %	Pulse Repetition frequency
	0.27 dB	Amplitude Variation
	6.12×10^{-6}	Pulse frequency, 53131A stand alone
	0.25 dB	Flatness of spectrum amplitude
	0.16 dB	Sine wave amplitude
	6.12×10^{-6}	Sine wave frequency, 53131A stand alone

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Signal Generator
Frequency Measure

0.1 Hz to 225 MHz	$5.27 \times 10^{-9} + 1$ count	Frequency counter HP53131A with GPS receiver
10 Hz to 40 GHz	$2.31 \times 10^{-9} + 1$ count	Frequency counter Anritsu MF2414B with GPS receiver

ELECTROMAGNETICS - RF MICROWAVE

NVLAP Code: 20/R08
Microwave Antenna Parameters

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
Monopole Antenna (IEEE 291 & ARP958)		
30 Hz to 50 MHz	0.39 dB	Antenna Factor, Gain
LISN[note 2]		
0.1 MHz to 30 MHz	0.5 dB	Impedance
0.1 MHz to 30 MHz	0.5 dB	Insertion Loss
100 V to 230 V	0.45 %	Voltage Drop

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CDN[note 2]		
0.1 MHz to 10 MHz	1.2 dB	Impedance
10 MHz to 30 MHz	0.7 dB	Impedance
30 MHz to 100 MHz	0.6 dB	Impedance
100 MHz to 230 MHz	0.8 dB	Impedance
0.1 MHz to 10 MHz	0.5 dB	Insertion Loss
10 MHz to 230 MHz	0.5 dB	Insertion Loss
RF Amplifier[note 2]		
0.01 MHz to 1000 MHz	1.4 dB	Gain

NVLAP Code: 20/R08
Microwave Antenna Parameters

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
EM Clamp[note 2]		
0.1 MHz to 230 MHz	0.5 dB	Insertion Loss
150 ohm to 50 ohm Adaptor[note 2]		
0.1 MHz to 230 MHz	0.5 dB	Insertion Loss

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Current Probe / Current Injection Probe[note 2]		
0.1 MHz to 230 MHz	0.5 dB	Insertion Loss
Isotropic Electric Field Probes (such as HI-4422)		
0.1 MHz to 1000 MHz	1.6 dB	Correction Factor
Isotropic Electric Field Probes (such as HI-6005)		
0.1 MHz to 1000 MHz	1.2 dB	Correction Factor
1000 MHz to 3500 MHz	2.2 dB	Correction Factor
50 ohm Termination[note 2]		
0.1 MHz to 1000 MHz	0.4 dB	Impedance

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NVLAP Code: 20/R17
RF Microwave Power Meters
RF Absolute Power Measure (Sine Wave unmodulated)
Signal Generator

Range	*Best Uncertainty (±)*[note 1]	*Remarks*
-40 dBm to +20 dBm (9kHz to 6 GHz)	3.68 %	Power Sensor Agilent E9304A
-50 dBm to +20 dBm (10 MHz to 18 GHz)	6.57 %	Power Sensor Agilent E4412A
-30 dBm to +20 dBm (50 MHz to 18 GHz)	7.1 %	Power Sensor Agilent 8487A
-30 dBm to +20 dBm (18 GHz to 40 GHz)	8.54 %	Power Sensor Agilent 8487A
-30 dBm to +20 dBm (40 GHz to 50 GHz)	10.88 %	Power Sensor Agilent 8487A

1. Represents an expanded uncertainty using a coverage factor, k=2, at an approximate level of confidence of 95%.
2. Items available for on-site service.

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